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Published In/Presented At

Patruno, J., Huang, H., Huang, M., Hutchinson, T., & Martino, M. (2013). *An analysis of the educational value and impact of a dual, versus single, robotic surgical console in the training of OBGYN Residents*. Poster presentation.

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An Analysis of the Educational Value and Impact of a Dual, Versus Single, Robotic Surgical Console in the Training of OBGYN Residents

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Objective

To investigate whether resident programs that invest in Dual User Robotic Consoles (DURC) are more committed to teaching residents robotic surgery than programs that have only Single User Robotic Consoles (SURC) by comparing program demographics, curriculum structure, aspects of surgical training, and attitudes and opinions towards robotic technology.

Hypothesis

Programs that invest in and utilize DURC are more likely to have a formal robotic teaching curriculum, are more committed to robotic surgical training, and are more likely to report positive opinions or attitudes towards robotic technology.

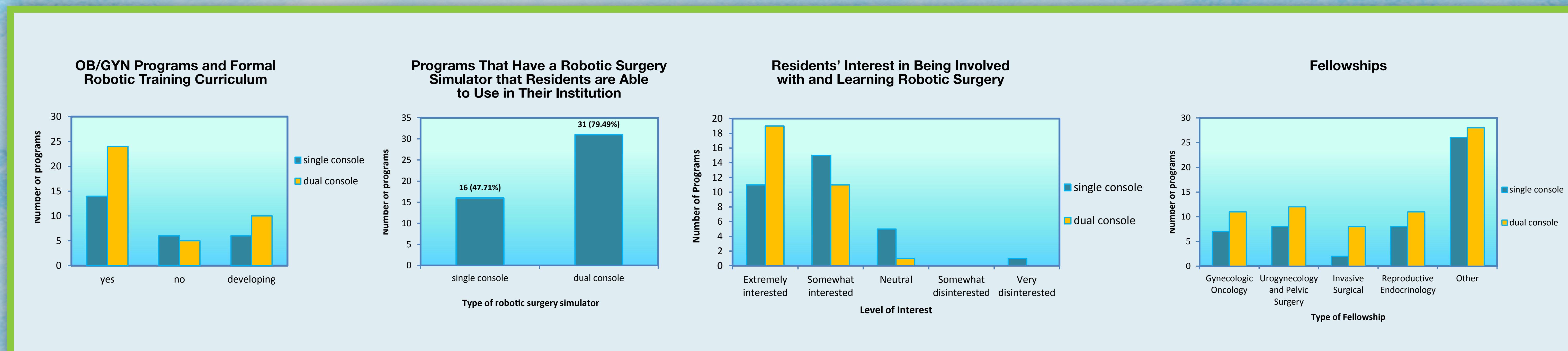
Methods

A web-based survey was distributed to 226 OBGYN residency program directors in January 2012. The content of the survey focused on the state of robotic surgery in each program and how robotic technology has affected training programs. Survey questions fell into four broad categories including; 1) Program demographics 2) Curriculum structure 3) Aspects of surgical training, and 4) Opinions and attitudes towards robotic technology. Programs with DURC and SURC were compared using a variety of educational metrics. All data was maintained in an Excel database and statistical assessment including χ^2 analysis and independent t-tests was performed using SPSS 16.0.

Results

Seventy-four program directors completed the survey (33% response rate). Of the responding programs, thirty-five have SURC (47%) and thirty-nine have DURC (53%).

- **Demographics:**
 - Responses included an even distribution between community and university programs and included input from programs in all regions of the country.
- **Curriculum structure:**
 - Programs with DURC are more likely to have a formal robotic training curriculum than programs with SURC but the association is not statistically significant (61.54% vs. 40.00%; $p=0.06$).
- **Commitment to robotic surgical training:**
 - Programs with DURC are not more likely than programs with SURC to have residents receive ACGME credit as primary surgeon on robotic cases (30.77% vs. 34.29%; $p=0.71$).
 - Programs with DURC are more likely than programs with SURC to have a robotic surgery simulator available for residents to learn robotic surgical techniques (79.5% vs. 45.7%; $p < 0.01$).
 - More gynecologic surgery fellowships are offered at programs with DURC than programs with SURC (42 vs 25, $p<0.01$).
- **Attitudes and opinions:**
 - A higher percentage of program directors of residencies with DURC considered their residents as “extremely interested” in being involved with and learning robotic surgery (61.29% vs. 34.38%).
 - Program directors who oversee programs with a DURC also indicated that robotics has had a less negative effect on the surgical skills of their residents than program directors in program with only SURC, although no statistical difference was noted (33.3% vs. 45.7%; $p=0.31$).



Discussion

Robotic surgery has become an important surgical technology and continues to influence the training of OBGYN residents. Both community-based and university-based programs have invested in dual consoles. Programs that have invested in DURC offer more opportunities for residents to learn robotics via simulation and also offer more surgical fellowships. Although not statistically significant, programs with DURC are more likely to have formal, structured robotics curriculums. Dual console programs also report higher level of resident interest in robotic surgery and a less negative effect of robotics on residents' surgical skills. Although investment in DURC may represent a higher level of commitment to teaching robotic surgical techniques to residents, it does not correlate with residents' ability to obtain ACGME credit for performing robotic surgery cases. ACGME credit for residents in programs with DURC may be hindered by the increased correlation with surgical fellowship programs.

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